



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/580,319

05/25/2006

Cecile Joubert

0501-1159

5678

466 7590 04/24/2009

YOUNG & THOMPSON  
209 Madison Street  
Suite 500  
ALEXANDRIA, VA 22314

EXAMINER

PEACE, RHONDA S

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

04/24/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,319	<b>Applicant(s)</b> JOUBERT ET AL.	
	<b>Examiner</b> Rhonda S. Peace	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9 and 11-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7,9 and 11-31 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/24/2009</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see pages 15, 19, and 20, filed 2/24/2009, regarding the objection to the drawings have been fully considered but they are not persuasive, as the replacement drawings have not been received by the Office.

Applicant's arguments, see page 17, filed 2/27/2009, with respect to the objection to claim 8 have been fully considered and are persuasive. The objection of claim 8 has been withdrawn.

Applicant's arguments, see pages 20-25, filed 2/24/2009, with respect to the rejection of claims 1, 5, 18, 23, and 24 have been fully considered and are persuasive. The rejection of claims 1, 5, 18, 23, and 24 has been withdrawn for the reasons cited in the Allowable Subject Matter section below.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 2/24/2009 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

The drawings are objected to because Figures 2, 5, and 8-10 do not contain proper axes labels for both vertical and horizontal axes. Also, Figure 1 contains excessive shading making it unsuitable for publication.

Applicant's arguments, filed 2/24/2009, assert corrected drawings were submitted with the Applicant's reply as filed on 2/24/2009. However, the drawings have

not been received by the Office. Therefore, the previous objection to the drawings, first set forth in the Office Action mailed 11/24/2008, is maintained.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claim 10 objected to because of the following informalities: Claim 10 is improperly labeled as "claim 9," in the Applicant's reply filed 2/24/2009, thereby resulting in two claims each labeled claim 9 which are followed by a claim 11. Appropriate correction is required.

***Allowable Subject Matter***

Claims 1-7, and 9-31 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Pertaining to claims 1-7, 9-17, and 26-31, the prior art does not disclose or reasonably suggest a nematic liquid crystal display device presenting two stable states, without an electric field, that are obtained by anchoring break, the two stable states corresponding to two textures of liquid crystal molecules, the twisting of which differs by 150 to 180 degrees in absolute values, wherein said nematic liquid crystal device comprises two polarizers, the first polarizer being placed on the side of the observer, the other polarizer being placed on the opposite face of the liquid crystal cell, the orientation of the two polarizers being shifted by a value equal to the rotatory power of the cell  $\pm \pi/2$ , the rotatory power corresponding to the effect of the most twisted texture. The most applicable art, Barberi et al (US 6,327,017), discloses a liquid crystal display comprising two polarizers, wherein two stable states are achieved without an electric field via an anchoring break. However, Barberi et al fails to disclose or reasonably suggest the orientation of the two polarizers being shifted by a value equal to the rotatory power of the cell  $\pm \pi/2$ , the rotatory power corresponding to the effect of the most twisted texture. Instead, Barberi et al discloses placing the polarizers at an angle of 45 degrees with respect to one another such that rotational hydrodynamic coupling is optimized. However, rotational hydrodynamic coupling is a physical effect describing the interaction between the liquid crystal molecules inside the liquid crystal cell,

Art Unit: 2874

whereas "rotatory power" of the current invention is an optical effect on the light polarization crossing the liquid crystal cell at the most twisted texture. Therefore, the current invention is distinguished over Barberi et al, and is in condition for allowance pending correction of the formal matters addressed above with respect to claim 10.

Concerning claims 18-25, the prior art does not disclose or reasonably suggest a method for the optimization of the orientation of two polarizers in a nematic liquid crystal display device presenting two stable states, without an electric field, that are obtained by anchoring break, the two stable states corresponding to two textures of liquid crystal molecules, the twisting of which differs by 150 to 180 degrees in absolute values, said method comprises the steps of consisting of calculating the rotatory power of the cell and positioning the two polarizers, the first polarizer being placed on the side of the observer, the other polarizer being placed on the opposite face of the liquid crystal cell, according to an orientation shifted by a value equal to the rotatory power of the cell  $\pm \pi/2$ , the rotatory power corresponding to the effect of the most twisted texture. The most applicable art, Barberi et al (US 6,327,017), discloses a liquid crystal display comprising two polarizers, wherein two stable states are achieved without an electric field via an anchoring break. However, Barberi et al fails to disclose or reasonably suggest the orientation of the two polarizers being shifted by a value equal to the rotatory power of the cell  $\pm \pi/2$ , the rotatory power corresponding to the effect of the most twisted texture. Instead, Barberi et al discloses placing the polarizers at an angle of 45 degrees with respect to one another such that rotational hydrodynamic coupling is optimized. However, rotational hydrodynamic coupling is a physical effect describing

Art Unit: 2874

the interaction between the liquid crystal molecules inside the liquid crystal cell, whereas "rotatory power" of the current invention is an optical effect on the light polarization crossing the liquid crystal cell at the most twisted texture. Therefore, the current invention is distinguished over Barberi et al, and is in condition for allowance for the reasons stated above.

### ***Conclusion***

This application is in condition for allowance except for the following formal matters:

1. The outstanding objection to the drawings.
2. The outstanding objection to claim 10 for improper numbering.

**Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).**

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

The following art made of record and not relied upon is considered pertinent to applicant's disclosure: Joubert et al (US 2007/0103619).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272- 2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/  
Examiner, Art Unit 2874

/Uyen-Chau N. Le/  
Supervisory Patent Examiner, Art Unit 2874